



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

**EP 0 970 627 A1**

(12)

**EUROPEAN PATENT APPLICATION**

published in accordance with Art. 158(3) EPC

(43) Date of publication:

**12.01.2000 Bulletin 2000/02**

(51) Int. Cl.<sup>7</sup>: **A24F 47/00**, A24B 15/16,  
A24D 1/18

(21) Application number: **98956765.6**

(86) International application number:  
**PCT/CN98/00279**

(22) Date of filing: **27.11.1998**

(87) International publication number:  
**WO 99/27806 (10.06.1999 Gazette 1999/23)**

(84) Designated Contracting States:

**BE CH DE FR GB LI**

(30) Priority: **01.12.1997 CN 97107802**

(71) Applicant: **Pu, Danming**

**Nanchong City, Sichuan 637000 (CN)**

(72) Inventor: **Pu, Danming**

**Nanchong City, Sichuan 637000 (CN)**

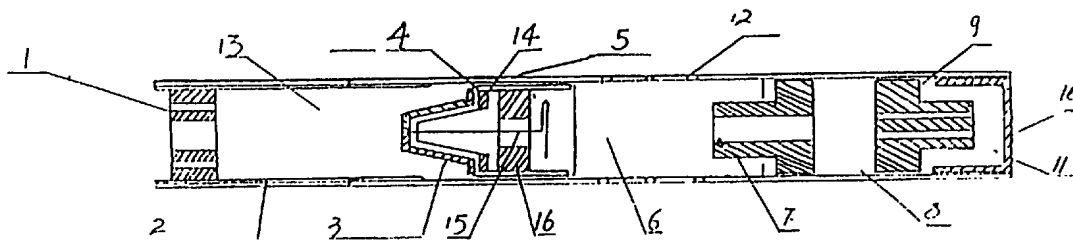
(74) Representative:

**Isenbruck, Günter, Dr. et al**  
**Patent- und Rechtsanwälte,**  
**Bardehle-Pagenberg-Dost-Altenburg-Geissler-**  
**Isenbruck**  
**Theodor-Heuss-Anlage 12**  
**68165 Mannheim (DE)**

(54) **A HEALTHY CIGARETTE**

(57) A kind of healthy cigarette, which is non-combustible, non-smoking and non-ash, thereby would not cause fire hazard, is disclosed. Its taste makes smoker clear-headed, and it can be preventive and therapeutic.

When this kind of cigarette is sucked, there are electrical, magnetic, sonic, light and aromatic effects occurring.



**Fig.1**

**EP 0 970 627 A1**

**Description**

## FIELD OF THE INVENTION

5 **[0001]** This invention relates to a kind of cigarettes, particularly, a cigarette-like article which does not burn, but sparkles and/or plays music piece, and is of great importance to health.

## BACKGROUND OF THE INVENTION

10 **[0002]** Usually, people while smoking burn up one end of a cigarette giving rise to mist or smoky fog that passes through one's mouth, tongue, throat, nose and other sense organs, and then reaches one's lung to stimulate said organs and nerves satisfying the smoker's physiological, psychological or social needs for his enjoying the fun of smoking. This way of smoking has many shortcomings. Such harmful components as nicotine, cigarette tar, CO, benzo-  
 15 pyrene, acetone, arsenic and DDT contained in the smoke badly damage smokers' health and the carelessness in smoking easily causes fire, or loss of properties. These turn out to be the main reasons for prohibiting or quitting smoking. Tobacco smoke is rated by WHO as one of the A class cancer-causing components and a worldwide tendency of dropping cigarette smoking prevails. On one hand, all the countries on earth are taking measures for introducing limitations on tobacco production; but, on the other hand, millions of smokers are raising even more demands for tobacco, thus making smoking one of the largest troubles of the world.

20 **[0003]** CN1045691A provides a smoking article making use of an electrical resistance heating element and an electric power source that bring forth tobacco flavor or haze and lead to smoking-like effect.

**[0004]** CN 2047887U discloses a smoking device with solid extract containing some extracts and Chinese traditional medicine.

25 **[0005]** CN 2226826Y discloses a unharmed imitation cigarettes comprising a filter and tobacco flavor medium, characterized in that some cigarette filaments and Chinese traditional medicines are installed therein.

**[0006]** CN 1035762A discloses a substitute for cigarettes, the raw materials of which are Chinese traditional medicines.

**[0007]** CN 1107015A discloses a human life-promoting healthy product in which finely cut tobacco is replaced by a natural, good-for-health wild plant after being collected, dried, steamed up, cut into small pieces, baked, and rolled up.

30 **[0008]** CN 1134800A discloses a non-toxic cigarettes which take tea leaves and chrysanthemum non-toxic to human body as the main raw material instead of nicotine-containing tobacco.

**[0009]** US Patent 5666978 discloses a smoking system in which a medium having tobacco flavor is heated by an electric heating element.

35 **[0010]** In these patent references, some of them are still using tobacco as the raw material wherein the tobacco still burns, thus leading to smoking dusts and stumps pollution or fire accidents due to careless cigarette ignition etc., there can not be found fundamental improvement; some of them are soaking the cut tobacco in the innovated Chinese medicines or using directly the latter to replace tobacco wherein both the smoking feeling and quitting or curing effect are yet not satisfying. These cigarettes can but satisfy smoker's taste or smell preference; with improvement of living conditions, people hope that while smoking, beautiful music can be heard, and vicissitude of lights can be seen, leading to  
 40 visual and audio enjoyments.

## SUMMARY OF THE INVENTION

45 **[0011]** The present inventor, after an extensive and intensive study, has unexpectedly found and developed a healthy cigarettes without ignition and without smoke and stumps pollution, thus eliminating the disadvantages of the prior art. In addition, this healthy cigarette has refreshing taste and raises the spirit against many diseases; while smoking, one can enjoy the fun of audio-, visual-, smell-, and/or magnetic effects simultaneously. And the medical effect of giving up or using substitutes for common cigarettes as well as health care can be obtained by enjoying the fun of health cigarettes. The present invention is just based on this finding.

50

## PREFERRED EMBODIMENTS OF THE INVENTION

55 **[0012]** One aspect of the present invention is to provide a healthy cigarette comprising a cigarette tip (2), a cigarette cylindrical body (5), fillings and a control valve; said cigarette tip (2) has one of its end filled with a filtering material constituting the filter (1), and its another end is connected with one end of the cylindrical body (5) in the middle of which are ventholes (12); the cavity between the cigarette tip (2) and the cigarette cylindrical body (5) is a flavor medium cylinder (13) filled with the fillings and the control valve is inside the cigarette cylindrical body (5) close to the end of the cigarette tip, said control valve is contacted with the inner cylindrical body (4), the end close to the cigarette tip of the inner cylin-

drical body (4) is in the form of an opening like an upset trumpet and over which there is an upper cover (3) accordant with its form, at the bottom of the upper cover and at the root of the trumpet of the inner cylindrical body (4) are magnetic rings (14), the two magnetic rings have opposite magnetic poles; at the inner side of the other end of the cylindrical body (5) is a splint (7) in the form of a fork and said end is connected with the cap cover (10). This cigarette makes neither sound, nor light.

**[0013]** Another aspect of the present invention is a healthy cigarette comprising a cigarette tip (2), a cigarette cylindrical body (5), fillings, a control valve, and a light-emitting mechanism; said cigarette tip (2) has one of its ends filled with filtering material constituting the filter (1), and its another end is connected with one end of the cylindrical body (5) in the middle of which are ventholes (12), the cavity between the cigarette tip (2) and the cylindrical body (5) is the flavor medium cylinder (13) filled with the fillings, inside the cylindrical body (5) is the control valve at the one end close to the cigarette tip, the control valve is connected with the inner cylindrical body (4), inside the inner cylindrical body there is an electrically conducting front inner plate (16) having a hollow hole, the end of the inner cylindrical body (4) close to the end of the cigarette tip is in the form of opening like an upset trumpet over which there is an upper cover (3) accordant with its form, the magnetic rings (14) are set at the bottom of the upper cover and at the root of the trumpet of the inner cylindrical body (4), the two magnetic rings have opposite magnetic poles, the middle portion of the upper cover (3) is fixed with one end of the "T" or the "τ" shape conducting wire (15) going through the central hole of the inner plate (16), the other end of the cylindrical body (5) has at its inner side a fork-shape splint (7), a power source (8) and a lamp socket (9), on the splint (7) is there an integrated circuit module controlling the light-emitting mechanism, the power source (8) is a button battery connected with a conducting wire, the lamp socket (9) is cylindrical, in the middle of which are two small holes used as the fixed holes of the two poles of the light-emitting part (11), the end portion of the cylindrical body (5) is connected with the cap cover (10), This cigarette only emits light because the positive and negative magnetic poles of the control valve are reversibly connected.

**[0014]** Still another aspect of the present invention is a healthy cigarette comprising a cigarette tip (2), a cylindrical body (5), fillings, a control valve, and an audio-visual mechanism, said cigarette tip (2) has its one end filled with a filtering material constituting the filter (1), and its another end is connected with one end of the cylindrical body (5) in the middle of which are ventholes (12), the cavity between the cigarette tip (2) and the cylindrical body (5) is the flavor medium cylinder (13) filled with the fillings, the cylindrical body (5) has in it the control valve at its end close to the cigarette tip, the control valve is connected with the inner cylindrical body (4), inside the inner cylindrical body is an electrically conducting front inner plate (16) having a hollow hole, the inner cylindrical body (4) is in a form of an opening like an upset trumpet at its end close to the cigarette tip, over which there is an upper cover (3) accordant with the form, the magnetic rings (14) are set at the bottom of the upper cover and at the root of the trumpet of the inner cylindrical body (4), the two magnetic rings have opposite magnetic poles, the middle portion of the upper cover (3) is fixed with one end of the "T" shape or "τ" shape conducting wire (15) going through the central hole of the inner plate (16), the other end of the cylindrical body (5) has at its inner side the fork-shape splint (7), a power source (8), and a lamp socket (9); on the splint (7) is fixed an integrated circuit module and a humming sheet (6) controlling the audio-visual mechanism, on the outer wall of the cylindrical body (5) positioned with the humming sheet (6) are ventholes (12), power source (8) is a button battery connected with a conducting wire, the lamp socket (9) is cylindrical, in the middle of which are two small holes used as fixing holes for the two poles of the light-emitting part (11), the ending portion of the cylindrical body (5) is connected with the cap cover (10). The positive and negative magnetic poles of the control valve for this cigarette are connected positively in order to make sound and emit light.

**[0015]** For the healthy cigarettes as indicated in the above items 1-3, the fillings in the flavor medium cylinder comprise a volatile cigarette perfume extract and one of prescription A, B, C, D or E by weight parts:

A. dichroa leaf 15-20, sesame leaf 25-35, licorice 6-10, borneol 10-15, mugwort leaf 18-23 and mint 15-20;

B. asarum 10-15, mint 10-15, perilla leaf 15-18, nardostachys 10-15, cinnamon 6-10, angelica 25-35, borneol 10-15, and chrysanthemum 18-23;

C. tussilago 15-20, cynanchum 10-15, acorus 5-20, perilla leaf 25-35 and sesame leaf 25-35;

D. borneol 10-15, sandalwood 25-35, acorus 15-20, asarum 12-18 and licorice 6-10;

E. ganoderma 15-20, cinnamon 10-15, asarum 12-18, bearded scutellaria 19-23, oldenlandia 25-35 and pepper 10-15;

wherein ratio of the weight parts for the various components of the volatile cigarette perfume extract read as follows:

osmanthus leaf oil 19-23, flavor lemonade oil 15-20, isobutyl salicylate 10-15, phenylethanol 10-15 and anisaldehyde 10-15.

**[0016]** For the healthy cigarette as indicated in the above items 1-3, the cap cover (10) stated thereabove is the cap cover of higher transparency prepared by a transparent material, preferably polyethene.

**[0017]** As it can be seen from the above-indicated, the object of the present invention may be realized. The invention not only can be used for storing the medicine flavor, but also be turned out to be very good article for inhaling the medicine flavor; it looks like a cigarette, accompanying with particular electrical-, magnetic-, audio-, video- and/or perfuming- effects. While smoking, a negative pressure is produced in the cigarette body, the peripheral air enters the cigarette body through the air hole and then through the inner cylinder, pushing open (i.e., triggering) the upper cover, and the air passes simultaneously the medicine-cigarette casing, turning out to be the carrier of the medicine flavor to be inhaled into the mouth cavity joining the blood circulation, then a red light sparkles and a beautiful musical piece starts to play automatically, bringing the smoker unlimited fun and happiness. The medicine gas of unique cigarette perfume can not only bring forth refreshment and revitalization, curing respiratory tract diseases, but also drop away a craving for tobacco in a certain period of time, assuming significant effect of dropping smoking cigarette or substituting for cigarette smoking. The unique outstanding feature of said product is having kept the smoker's common habitual style; once a mouthful of Chinese medicine flavor is inhaled instead of harmful tobacco flue, sparking red light can be found instead of dangerous burning and an amusing musical piece is simultaneously performed, such harmony of sound, light, magnetism, and flavor is very helpful for one's health.

**[0018]** One thing should be mentioned here: prescription A is a prescription for giving up smoking or substituting smoking; prescription B is a prescription for curing the headache or light-headache; Prescription C is a prescription for curing the cough or inflammation; Prescription D is a prescription for curing coronary heart diseases; and Prescription E is a life-promoting and cancer-preventing prescription.

#### BRIEF DESCRIPTIONS OF THE ATTACHED DRAWINGS

##### **[0019]**

Fig. 1 is a structural scheme of the healthy cigarette.

Fig. 2 shows the electrical circuit principle of the healthy cigarettes.

**[0020]** The invention will be further described in combination with the attached drawings and examples. It should be understood that these examples are intended to explain the present invention without limiting the present invention.

#### EXAMPLES

##### Example 1

**[0021]** According to the following weight parts, the Chinese traditional medicines are taken as a prescription for giving up smoking or substituting smoking: dichroa leaf 15, sesame leaf 30, licorice 10, borneol 15, mugwort leaf 21 and mint 15. After having been processed, these Chinese traditional medicines are ground into solid powder agent, and then mixed up homogeneously for use.

**[0022]** The cigarette perfume extract is prepared according to the following weight parts: osmanthus leaf oil 19, flavor lemonade oil 18, isobutyl salicylate 15, phenylethanol 10 and anisaldehyde 12; these components are then mixed up homogeneously for use. And then, the traditional medicines after being processed are ground into solid powder as the fillings after being fed with the cigarette perfume extract.

**[0023]** A life-promoting healthy cigarette is designed, which comprises a cigarette tip, a cigarette cylindrical body, fillings, and also a control valve and an audio-visual mechanism. One end of the cigarette tip (2) is filled with the filtering material to constitute the filter (1), while the other end is connected with one end of the cigarette cylindrical body (5) in the middle of which are the ventholes. The cavity between the cigarette tip (2) and the cylindrical body (5) is the flavor medium cylinder (13) filled with the filling. The cylindrical body (5) has in it a control valve close to the cigarette tip end, the control valve is contacted with an inner cylindrical body. The inner cylindrical body 4 has in it an electrically conducting front inner plate (16) having a hollow hole. The inner cylindrical body (4) is in the form of an opening like an upset trumpet close to the cigarette tip end, over which is an upper cover (3) accordant with its form. Magnetic rings (14) are set at root of the upper cover and at the root of the trumpet of the inner cylindrical body (4), the two magnetic rings have opposite magnetic poles, the middle portion of the upper cover (3) is fixed with one end of the "T" shape or "τ" shape conducting wire (15) going through the central hole of the inner plate (16), the other end of the cylindrical body (5) has in its inner side a fork-shape splint (7), a power source (8), and a lamp socket (9), on the outer wall of the cylindrical body (5) positioned with the humming sheet (6) are set up air holes (12), on the splint (7) are fixed the integrated circuit module and humming sheet for controlling audio-visual mechanism. The power source is a button battery connected

with the electrical parts respectively by means of the conducting wire, and its circuitry block diagram is as shown in Fig. 2. The humming sheet (6) and the integrated circuit are the core portion of the entire audio-visual mechanism. The humming sheet (6) and the light-emitting part (11) are respectively connected with the two output legs of the integrated circuit module, and said integrated circuit module has on it further connected power source (8) and switch K, i. e., the gate of the control valve, the electrical circuit has further a resistance R connected in series to increase the resistance value and to lengthen the use time. The lamp socket (9) is cylindrical, in the middle of which are two small holes used as the fixing holes of the two poles of the light-emitting part (11). The ending portion of the cylindrical body (5) is connected with the cap cover (10).

**[0024]** The flavor medium casing accommodating the Chinese traditional medicines and the volatile cigarette perfume extract is positioned between the upper cover (3) and the filter. While being assembled, the ready-made fillings are put into the cavity of the cigarette tip, then the other end of the cigarette tip is connected with one end of the cylindrical body having in its middle the ventholes.

**[0025]** While smoking, a negative pressure is produced in the cylindrical body, the peripheral air enters the cylindrical body through the air holes and pushes open (i.e., triggering) the upper cover through the inner cylinder, then the air passes again the medicine flavor casing, turning out to be the carrier of the medicine flavor to be inhaled into the mouth to join the blood circulation, and simultaneously a red light sparkles and beautiful amusing musical piece is performed wonderfully, bringing one to unlimited fun and joy.

#### Example 2

**[0026]** According to the following weight parts, the Chinese traditional medicines are taken as a prescription for curing the headache and the light-headache: asarum 10, mint 12, perilla leaf 18, nardostachys 15, cinnamon 9, angelica 25, borneol 15 and chrysanthemum 21.

**[0027]** The cigarette cylindrical body structure and the work principle are the same as these of examples 1.

**[0028]** The cigarette perfume extract is prepared as the following weight parts: osmanthus leaf oil 22, flavor lemonade oil 16, isobutyl salicylate 13, phenylethanol 10 and anisaldehyde 11; these components are then mixed up homogeneously for use. And then, the traditional medicines after being processed are ground into solid powder, put into the flavor medium casing and then are fed with the volatile cigarette perfume extract.

#### Example 4

**[0029]** According to the following weight parts, the Chinese traditional medicines are taken as a prescription for curing the coronary heart diseases: borneol 10, sandalwood 30, acorus 20, asarum 15 and licorice 10. The cigarette cylindrical body structure and the work principle are the same as those of Example 1.

**[0030]** The cigarette perfume extract is prepared as the following weight parts: osmanthus leaf oil 19, flavor lemonade oil 20, isobutyl salicylate 12, phenylethanol 13 and anisaldehyde 14; these components are then mixed up homogeneously for use. Said Chinese traditional medicines after being processed are ground into solid powder, put into the flavor medium casing, and then the volatile cigarette perfume extract is further injected thereto.

#### Example 5

**[0031]** According to the following weight parts, the Chinese traditional medicines are taken as a prescription for promoting life and preventing cancer: ganoderma 18, cinnamon 15, asarum 12, bearded scutellaria 21, oldenlandia 26 and pepper 14.

**[0032]** The cigarette cylindrical body structure and the work principle are the same as those of example 1.

**[0033]** The cigarette perfume extract is prepared according to the following weight parts: osmanthus leaf oil 20, flavor lemonade oil 18, isobutyl salicylate 14, phenylethanol 12 and anisaldehyde 13; these components are then mixed up homogeneously for use. Said Chinese traditional medicines after being processed are ground into solid powder agent, put into the flavor medium casing, and then the volatile cigarette perfume extract is further injected thereto.

#### Applicability Example

**[0034]** The present inventor ever made an evaluation on the smoking quitting effect of said smoking quitting article in July-September, 1997 in Beijing aiming at 71 smokers of different professionals.

## I. Clients Under Test And Method

### (I) Clients Under Test:

5 **[0035]** smoking-quitting volunteers from institutions, research institutes and army of the present municipality.

### (II) Test Method

#### 1. Test form

10 **[0036]** Test forms are used to inquire the followings of the smokers: the age starting to smoke; smoking quantity; smoking years; smoking-quitting history; smoking personnel in the smoker's family; species of home kitchen fuels etc.

#### 2. Method for smoking quitting

15 **[0037]** While the volunteer is smoking orally the smoking-quitting article, the sparkling red light appears instead of harmful cigarette water, its unique outstanding Chinese traditional medicine flavor will take the place of harmful tobacco flue or haze and simultaneously an amusing musical piece will be performed so as to conquer the quitting interruption of the smoker. In general, each smoker takes two pieces, the effective duration of each piece lasts 20 days, the smoking-quitting therapeutical course lasts 40 days. Herein the smokers are only allowed to smoke the smoking-quitting articles instead of other cigarettes.

#### 3. Health indices and the detection methods thereof

25 **[0038]** We make use of the following three health indices to lead the evaluation on the quitting effect: nicotine metabolite in the urine; carbon monoxide (CO) in the exhaled gas, and sulfocyanate in the spit fluid. The half-life of nicotine metabolite in one's body is 20 hours (in the range of 10-37 hour), it is an specific index for detecting the exposure of cigarette haze as determined by the barbituric acid test. The half-life of carbon monoxide in one's body is less than 1 hour, and while at rest it is 3-4 hours. Said CO in the exhaled air is determined by the electrical potential method. The half-life of sulfocyanate in one's body is very long, about 7-14 days; the content of sulfocyanate in one's spit fluid is determined by the test paper method.

#### 4. Indices of evaluation on smoking quitting effect

35 **[0039]** We make use of three health indices of the non-smoker as a criterion for the indices of evaluation on the smoking quitting effect. As is reported by foreign literature, the contents of nicotine metabolites in the morning and the afternoon urine of the non-smokers (average and criterion difference ) are respectively  $0.7 \pm 0.2 \mu\text{g}/\text{mg}$  creatinine and  $0.9 \pm 0.2 \mu\text{g}/\text{mg}$  creatinine; the concentrations of carbon monoxide in the exhaled air and of sulfocyanate in the spit fluid of the non-smokers are respectively 6ppm and  $< 30 \mu\text{g}/\text{ml}$ . The evaluated criteria of the quitters reads as follows:

40 (1) Total effectiveness: quitting rate + significant effective rate + effective rate;

(2) quitting rate: percentage of the cigarette-quitted persons among the total number of persons under test;

45 (3) significant effective rate: percentage of the smokers having their smoking quantity dropped above 50% among the total number of persons under test;

(4) effective rate: percentage of the smokers having their smoking quantity dropping 20-50% among the total number of persons under test;

50 (5) non-effective rate: percentage of the smokers having their smoking quantity dropping below 20% among the total number of persons under test.

## II. Results

### 55 (I) General

**[0040]** Persons under test this time include 71 smokers of cadre, servicemen, inhabitant, scientific researcher etc.

(another 9 persons are not listed in this statistics because they have not been carried out the health indices determination after smoking quitting due to many objective reasons such as going on errand, having no time etc.). The ages of the 71 persons under test ranges 19-71 years old; their average age is 38; the average age then starting to smoke is 20; the youngest starting to smoke is 12; their average smoking quantity is 13 pieces; there are 23 persons smoking above 20 pieces each day; number of smoking years reads 17 years in average. From the above result, it can be seen that the smokers under test are mainly adults and young people having a moderate smoking quantity.

## (II) Determination Result of Health Indices

### 1. Content of nicotine metabolite in the urine

**[0041]** The content of nicotine metabolite in the urine of the smokers can sensitively show the smoking extent of the smokers. Among the 30 smokers (5 of them only had been carried out the determination after smoking-quitting) who have used the quitting article, the nicotine metabolite in the urine of 14 smokers has dropped down to the level of the non-smokers ( $0.97 \pm 0.24$   $\mu\text{g}/\text{mg}$  nicotine metabolite, creatinine), the content of the nicotine metabolite in the urine of the other 16 smokers shows no change in comparison with that before smoking quitting . (see Table 1).

Table 1

Contents of Nicotine Metabolite, Mg/mg in the urine before and after smoking-quitting					
Group Division	sample quantity	before smoking-quitting		after smoking-quitting	
		average value	difference	average value	difference
Group A	14	1.02	0.86	0.97	0.25
Group B	16	4.19	2.91	4.42	2.54
Group A: persons quitted smoking Group B: smokers having decreased quantity of their smoking .					

### 2. CO concentration in the exhaled air

**[0042]** For 14 smokers after smoking-quitting, the average value of CO in the exhaled air drops from the original 10.10 ppm to 6.36ppm while for 57 smokers after having used the quitting article, their smoking quantity drops in different degrees and their average value of CO concentration in the exhaled air drops from the original 23.42 ppm to 16.33ppm (see Table 2).

Table 2

CO concentration (ppm) in the exhaled air before and after smoking quitting					
Group Division	sample quantity	before smoking quitting		after smoking quitting	
		average value	difference	average value	difference
Group A	14	10.10	3.59	6.36	1.44
Group B	57	23.42	12.18	16.33	9.49

### 3. Concentration of sulfocyanate in the spit fluid

**[0043]** For 14 smokers after having used the smoking-quitting article, the average value of the sulfocyanate concentration in the spit fluid drops from the original  $26\mu\text{g}/\text{ml}$  to  $20\mu\text{g}/\text{ml}$  while for 57 smokers after having used the smoking quitting article, their smoking quantity drops in different degrees and the average value of sulfocyanate concentration in the spit fluid drops from the original  $54.12\text{Mg}/\text{ml}$  to  $35.96\mu\text{g}/\text{ml}$  (see Table 3).

Table 3

Concentration of sulfocyanate (Mg/ml) in the spit fluid before and after smoking quitting					
Group Division	sample quantity	before smoking-quitting		after smoking-quitting	
		average value	difference	average value	difference
Group A	14	26.67	8.89	20.00	6.55
Group B	57	54.12	30.02	35.96	17.76

## (III) Evaluation on Smoking quitting Effect

**[0044]** Among 71 smokers, the three health indices of 14 smokers after having used the quitting article have dropped to those levels of the non-smokers. The smoking quantity of 57 smokers drops in different degrees, 13 of them have their-smoking quantity dropped to above 50%; 32 of them have their smoking quantity dropped to 20-50% and 12 of them dropped to below 20%. From the above result, it can be found that the total effective rate of the 71 smokers after having used the smoking quitting article reads 83.1% among which the smoking quitting rate reads 19.72%, the significant effective rate reads 18.31% and the effective rate reads 45.07%.



changes of three Health Indices Before and After Cigarette Quitting

code number	age	age starting to smoke	smoking quantity (pieces each day)			smoking duration (years)	nicotine metabolite $\mu\text{g}/\text{mg}$ creatinine		CO (ppm)		sulfoyanate ( $\mu\text{g}/\text{ml}$ )	
			before cigarette quitting	after cigarette quitting	dropping down rate (%)		before cigarette quitting	after cigarette quitting	before cigarette quitting	after cigarette quitting	before cigarette quitting	after cigarette quitting
1	44	20	5	3	40	24	1.35		12	10	30	20
2	50	38	20	4	80	12	2.35	4.46	18	15	30	20
3	50	24	30	14	53.3	26	11.92		50	37	100	50
4	41	20	5	5	0	21	2.62		45	32	50	50
5	38	20	10	4	60	18	4.5		35	16	100	50
6	46	20	20	10	50	26	6.04		42	17	100	50
7	47	18	20	16	20	29	2.50		17	14	100	50
8	53	33	5	1	80	20	0.67	9.0	10	5	20	10
9	39	20	10	0	100	19	0.82	1.0	7	7	30	30
10	47	20	10	6	40	27	3.5	6.99	28	14	50	30
11	43	16	20	5	75	27	2.96		28	18	100	50

## changes of three Health Indices Before and After Cigarette Quitting

code number	age	age starting to smoke	smoking quantity (picces each day)			smoking duration (years)	nicotine metabolic, $\mu$ g/mg creatinine		CO (ppm)		sulfocyanate ( $\mu$ g/ml)	
			before cigarette quitting	after cigarette quitting	dropping down rate (%)		before cigarette quitting	after cigarette quitting	before cigarette quitting	after cigarette quitting	before cigarette quitting	after cigarette quitting
13	58	40	10	0	100	18	0.85	1.11	7	4	20	10
14	38	20	10	0	100	18	0.57	0.7	9	7	20	20
15	59	20	20	16	20	39	4.53		23	19	50	50
16	46	20	10	3	70	26	1.7		10	8	50	50
17	33	20	20	14	30	13	1.77		22	11	100	50
18	56	25	10	5	50	31	5.03	10.39	25	16	50	>30
19	29	19	5	1	80	10	1.18	1.65	12	7	20	10
20	30	18	15	15	0	12	6.26		37	22	100	50
21	36	25	20	20	0	11	4.12		35	23	100	50
23	39	20	20	0	100	19	0.65	0.92	7	6	30	20
24	45	17	10	6	40	28	3.09		18	8	50	50

changes of three Health Indices Before and After Cigarette Quitting

code number	age	age starting to smoke	smoking quantity (pieces each day)			smoking duration (years)	nicotine metabolite, $\mu\text{g}/\text{mg}$ creatinine		CO (ppm)		sulfocyanate ( $\mu\text{g}/\text{ml}$ )	
			before cigarette quitting	after cigarette quitting	dropping down rate (%)		before cigarette quitting	after cigarette quitting	before cigarette quitting	after cigarette quitting	before cigarette quitting	after cigarette quitting
25	38	28	10	0	100	10	3.89	0.94	15	6	50	30
26	71	20	10	0	100	51	0.86	1.34	8	4	<30	20
27	54	20	20	15	25	34	5.76		17	10	50	50
29	40	18	10	0	100	32	0.51	1.32	14	6	<30	20
31	43	18	10	5	50	25	8.92	4.46	33	8	50	20
32	33	24	10	2	80	9	5.19	5.93	26	8	30	20
33	45	20	10	4	60	25	4.41	2.47	18	8	50	20
34	41	20	10	5	50	21	6.95		50	12	30	20
35	44	18	20	20	0	26	8.57		22	18	100	50
36	40	17	10	0	100	23	0.6	1.24	10	4	25	20
37	46	16	15	14	6.6	30	6.09		27	12	100	50

## changes of three Health Indices Before and After Cigarette Quitting

code number	age	age starting to smoke	smoking quantity (pieces each day)			smoking duration (years)	nicotine metabolite, $\mu\text{g}/\text{mg}$ creatinine		CO (ppm)		sulfoeyanate ( $\mu\text{g}/\text{ml}$ )	
			before cigarette quitting	after cigarette quitting	dropping down rate (%)		before cigarette quitting	after cigarette quitting	before cigarette quitting	after cigarette quitting	before cigarette quitting	after cigarette quitting
38	56	18	10	10	0	32	3.32		20	18	50	50
39	41	18	20	10	50	23	5.23	3.8	28	11	>30	30
40	40	20	20	20	0	20	6.81		38	20	100	100
41	57	17	10	8	20	30	6.76		18	15	30	30
42	54	25	20	10	50	29	24.37		50	42	75	40
43	34	10	15	0	100	24	1.12	0.69	7	7	20	10
44	49	20	10	7	30	29	5.02		13	10	>30	<30
45	47	20	30	0	100	27	0.47	1.22	16	7	30	20
46	31	19	25	5	20	12	10.25		43	13	50	>30
47	52	30	3	0	100	22	0.55	0.56	9	7	10	10
48	49	25	10	8	20	27	5.0		15	16	50	30

changes of three Health Indices Before and After Cigarette Quitting

code number	age	age starting to smoke	smoking quantity (pieces each day)			smoking duration (years)	nicotine metabolite, $\mu\text{g}/\text{mg}$ creatinine		CO (ppm)		sulfoyanate ( $\mu\text{g}/\text{ml}$ )	
			before cigarette quitting	after cigarette quitting	dropping down rate (%)		before cigarette quitting	after cigarette quitting	before cigarette quitting	after cigarette quitting	before cigarette quitting	after cigarette quitting
49	35	20	20	20	0	15	11.2		36	30	60	50
50	41	12	15	9	40	29	7.59		20	15	50	50
51	33	22	2	1	50	11	0.98	3.23	13	7	30	20
52	35	25	5	3	40	10	10.3	2.48	23	14	>30	20
54	35	25	5	0	100	10	1.3	0.8	17	7	20	20
55	30	20	5	1	80	10	2.47	2.29	6	6	10	10
56	33	23	5	5	0	10			21	9	50	30
57	47	21	20	10	50	26	5.16		29	16	50	30
59	58	53	2	0	100	5	1.06	0.74	8	9	30	30
60	41	22	10	8	20	19			22	16	50	30
61	32	18	15	10	33.3	14		2.97	13	7	30	<30

changes of three Health Indices Before and After Cigarette Quitting

code number	age	age starting to smoke	smoking quantity (pieces each day)			smoking duration (years)	nicotine metabolite $\mu\text{g}/\text{mg}$ creatinine		CO (ppm)		sulfoeyanate ( $\mu\text{g}/\text{ml}$ )	
			before cigarette quitting	after cigarette quitting	dropping down rate (%)		before cigarette quitting	after cigarette quitting	before cigarette quitting	after cigarette quitting	before cigarette quitting	after cigarette quitting
62	19	14	10	10	60	5			6	5.5	>30	>30
63	20	17	10	10	50	6		2.97	13	14	>30	<30
64	25	18	9	9	22.2	8		4.76	10	12	100	<30
65	26	23	3	3	100	3		1.93	7	8	20	30
69	20	12	10	10	0	8		3.92	14	11	>30	>30
70	28	20	10	3	70	8		1.06	6	20	20	20
71	22	19	3	3	0	3			10	13	20	20
72	20	15	15	8	46.6	5			25	53	100	100
73	22	16	20	15	25	6			35	37	100	>50
74	20	15	10	5	50	5			5	10	20	20
75	22	18	8	5	37.5	4			20	22	50	>30

changes of three Health Indices Before and After Cigarette Quitting

code number	age	age starting to smoke	smoking quantity (pieces each day)			smoking duration (years)	nicotine metabolite, $\mu\text{g}/\text{mg}$ creatinine		CO (ppm)		sulfoyanate ( $\mu\text{g}/\text{ml}$ )	
			before cigarette quitting	after cigarette quitting	dropping down rate (%)		before cigarette quitting	after cigarette quitting	before cigarette quitting	after cigarette quitting	before cigarette quitting	after cigarette quitting
76	26	21	20	15	25	5			20	14	>30	20
77	23	14	15	10	33.3	9			13	25	>30	>30
78	19	12	17	15	11.7	7			50	32	100	>30
79	19	15	6	3	50	44			25	14	>30	20
80	26	24	10	4	60	2			15	15	20	>30

## Industrial Applicability

**[0045]** From the above stated, it can be found that the present invention possesses the following merits: the cigarette cylindrical body structure is changed from the igniting type to the non-igniting type; there is no tobacco haze or cigarette end pollution; it has music and red light; the inhaled harmful smoky flue is changed into helpful medicine flavor; finely extracted medicine flavor takes the place of harmful smoky haze, eliminating the damage of smoking to human boy and environment; it is healthy, convenient, safe and economical; in addition, it is helpful to one's body and health, promoting the cells' metabolism, diminishing inflammation and sterilization, balancing the Yin -Yang, and bringing forth strong immunity action.

## Claims

1. A healthy cigarette comprises a cigarette tip (2), a cigarette cylindrical body (5), fillings and a control valve; said cigarette tip (2) has one of its end filled with a filtering material constituting the filter (1), and its another end is connected with one end of the cylindrical body (5) in the middle of which are ventholes (12); the cavity between the cigarette tip (2) and the cigarette cylindrical body (5) is a flavor medium cylinder (13) filled with the fillings and the control valve is inside the cigarette cylindrical body (5) close to the end of the cigarette tip, said control valve is contacted with the inner cylindrical body (4), the end close to the cigarette tip of the inner cylindrical body (4) is in the form of an opening like an upset trumpet and over which there is an upper cover (3) accordant with its form, at the bottom of the upper cover and at the root of the trumpet of the inner cylindrical body (4) are magnetic rings (14), the two magnetic rings have opposite magnetic poles; at the inner side of the other end of the cylindrical body (5) is a splint (7) in the form of a fork and said end is connected with the cap cover (10).
2. A healthy cigarette comprises cigarette tip (2), a cigarette cylindrical body (5), fillings, a control valve, and a light-emitting mechanism; said cigarette tip (2) has one of its ends filled with filtering material constituting the filter (1), and its another end is connected with one end of the cylindrical body (5) in the middle of which are ventholes (12), the cavity between the cigarette tip (2) and the cylindrical body (5) is the flavor medium cylinder (13) filled with the fillings, inside the cylindrical body (5) is the control valve at the one end close to the cigarette tip, the control valve is connected with the inner cylindrical body (4), inside the inner cylindrical body is there an electrically conducting front inner plate (16) having a hollow hole, the end of the inner cylindrical body (4) close to the end of the cigarette tip is in the form of opening like an upset trumpet over which there is an upper cover (3) accordant with its form, the magnetic rings (14) are set at the bottom of the upper cover and at the root of the trumpet of the inner cylindrical body (4), the two magnetic rings have opposite magnetic poles, the middle portion of the upper cover (3) is fixed with one end of the "T" or the "τ" shape conducting wire (15) going through the central hole of the inner plate (16), the other end of the cylindrical body (5) has at its inner side a fork-shape splint (7), a power source (8) and a lamp socket (9), on the splint (7) is there an integrated circuit module controlling the light-emitting mechanism, the power source (8) is a button battery connected with a conducting wire, the lamp socket (9) is cylindrical, in the middle of which are two small holes used as the fixed holes of the two poles of the light-emitting part (11), the end portion of the cylindrical body (5) is connected with the cap cover (10).
3. A healthy cigarette comprises a cigarette tip (2), a cylindrical body (5), fillings, a control valve, and an audio-visual mechanism, said cigarette tip (2) has its one end filled with a filtering material constituting the filter (1), and its another end is connected with one end of the cylindrical body (5) in the middle of which are ventholes (12), the cavity between the cigarette tip (2) and the cylindrical body (5) is the flavor medium cylinder (13) filled with the fillings, the cylindrical body (5) has in it the control valve at its end close to the cigarette tip, the control valve is connected with the inner cylindrical body (4), inside the inner cylindrical body is an electrically conducting front inner plate (16) having a hollow hole, the inner cylindrical body (4) is in a form of an opening like an upset trumpet at its end close to the cigarette tip, over which there is an upper cover (3) accordant with the form, the magnetic rings (14) are set at the bottom of the upper cover and at the root of the trumpet of the inner cylindrical body (4), the two magnetic rings have opposite magnetic poles, the middle portion of the upper cover (3) is fixed with one end of the "T" shape or "τ" shape conducting wire (15) going through the central hole of the inner plate (16), the other end of the cylindrical body (5) has at its inner side the fork-shape splint (7), a power source (8), and a lamp socket (9); on the splint (7) is fixed an integrated circuit module and a humming sheet (6) controlling the audio-visual mechanism, on the outer wall of the cylindrical body (5) positioned with the humming sheet (6) are ventholes (12), power source (8) is a button battery connected with a conducting wire, the lamp socket (9) is cylindrical, in the middle of which are two small holes used as fixing holes for the two poles of the light-emitting part (11), the ending portion of the cylindrical body (5) is connected with the cap cover (10).



4. The healthy cigarettes as claimed in one of claims 1-3, wherein the fillings in the flavor medium cylinder comprise a volatile cigarette perfume extract and one of prescription A , B, C , D or E by weight parts:

A. dichroa leaf 15-20, sesame leaf 25-35, licorice 6-10, borneol 10-15, mugwort leaf 18-23 and mint 15-20;

B. asarum 10-15, mint 10-15, perilla leaf 15-18, nardostachys 10-15, cinnamon 6-10 , angelica 25-35, borneol 10-15, and chrysanthemum 18-23,

C. tussilago 15-20, cynanchum 10-15, acorus 5-20, perilla leaf 25-35 and sesame leaf 25-35;

D. borneol 10-15, sandalwood 25-35, acorus 15-20, asarum 12-18 and licorice 6-10;

E. ganoderma 15-20, cinnamon 10-15, asarum 12-18, bearded scutellaria 19-23, oldenlandia 25-35 and pepper 10-15;

wherein ratio of the weight parts for the various components of the volatile cigarette perfume extract read as follows:

5. The healthy cigarette as claimed in one of claims 1-3, wherein the cap cover (10) is that of higher transparency prepared by a transparent material.

osmanthus leaf oil 19-23, flavor lemonade oil 15-20, isobutyl salicylate 10-15, phenylethanol 10-15 and anisaldehyde 10-15 .

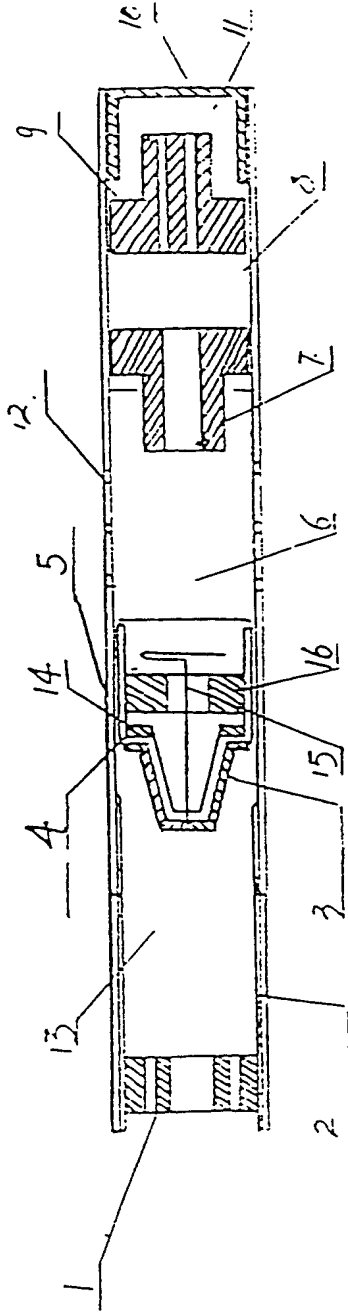


Fig.1

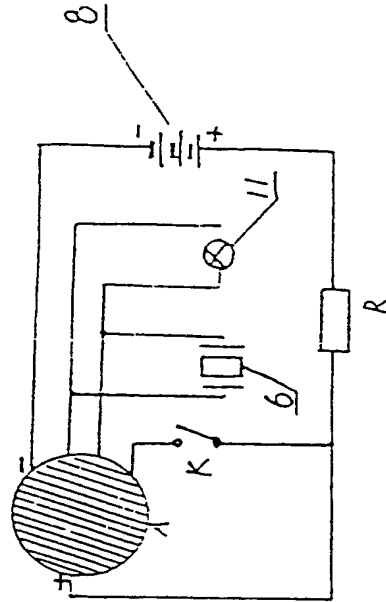


Fig.2

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/CN98/00279

## A. CLASSIFICATION OF SUBJECT MATTER

IPC<sup>6</sup> A24F47/00,A24B15/16,A24D1/18

According to International Patent Classification(IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched(classification system followed by classification symbols)

IPC<sup>6</sup> A24F47/00,13/00;A24B15/16;A24D1/00,1/18

Documentation searched other than minimum documentation to the extent that such documents are included in the field searched

Chinese Patent Document 1985-today

Electronic data base consulted during the international search(name of data base and, where practicable, search terms used)

Database : WPI,EPODOC,JPA,CNPAT ; Search terms : cigarette,electrical

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant claim No.
X	CN-2047485U(Zhao,Yuzhong),15.11.89,the whole document	1, 2, 3
Y	(the same with above)	4, 5
Y	CN-1105217A(Nie,Xingwei),19.07.95,the whole document	1 - 5
Y	CN-2045579U(Fan,wei),11.10.89,the whole document	1 - 3
Y	CN-1035762A(Jin,Xuewen),27.09.89,the whole document	4, 5
Y	CN-87103774A(Cui,bichao et al),12.10.88,the whole document	4, 5
A	US-5613505(PHILIP MORRIS Co.),25.03.97,the whole document	1 - 3
A	EP-0520231(REYNOLDS TOBACCO Co.),30.12.92, the whole document	1 - 3

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason(as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

11.12. 98

Date of mailing of the international search report

24 December 1998 (24.12.98)

Name and mailing address of the ISA/

The Chinese Patent Office  
6, Xitucheng Road, Haidian District,  
Beijing, 100088, China

Facsimile No. 86-10-62019451

Authorized officer

HE,Yuefeng

Telephone No. (86-10)62093928



Form PCT/ISA/210(second sheet)(July 1992)

**INTERNATIONAL SEARCH REPORT**  
 Information on patent family members

 International application No.  
**PCT/CN98/00279**

Patent document cited in search report	Publication date	Patent family members	Publication date
CN-2047485U	15.11.89	None	
CN-1105217A	19.07.95	None	
CN-2045579U	11.10.89	None	
CN-1035762A	27.09.89	None	
CN-87103774A	12.10.88	None	
US-5613505	25.03.97	WO9527411	19.10.95
		BR9505874	21.02.96
		EP0703735	03.04.96
		TW274507	21.04.96
		JP8511175T	26.11.96
EP-0520231	30.12.92	CA2069687	29.12.92
		JP5184675	27.07.93
		US5285798	15.02.94
		US5357984	25.10.94
		TW234682	21.11.94